

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 4, 7, 9, 23, and 24.

Please cancel claims 11 and 22.

Please add claim 27.

Please replace the claims with the following listing of the claims.

Listing of the Claims:

1. (Currently Amended) A hand-held device for monitoring a patient's blood pressure, comprising:

a hand-held component configured to be held proximal to the patient's skin;

a first optical module operating in a reflective mode and ~~mounted on~~ comprised by the hand-held component, the first optical module comprising a first optical source component configured to generate optical radiation and a first optical sensor configured to detect reflected radiation from the patient and, in response, generate a first set of information when the hand-held component is held proximal to the patient's skin;

a second optical module operating in a reflective mode and ~~mounted on~~ comprised by the hand-held component, the second optical module comprising a second optical source component configured to generate optical radiation and a second optical sensor configured to detect reflected radiation from the patient and, in response, generate a second set of information when the hand-held component is held proximal to the patient's skin;

an electrical sensor ~~mounted on~~ comprised by the hand-held component and comprising an electrode pair configured to generate a third set of information when the hand-held component is held proximal to the patient's skin; and

a processing module, ~~mounted in~~ comprised by the hand-held component, and configured to receive the first, second, and third sets of information, the processing module comprising a processor that calculates a first ~~time-difference between~~ time-dependent property from components of the first set of information and the second set of information and a second ~~time-difference between~~ time-dependent property from the third set of information and at least one of the first and second sets of information and compares the first and second ~~time-differences~~ time-dependent properties to a mathematical model to calculate a blood pressure value.

2-3. (Canceled)

4. (Currently Amended) The device of claim 1, wherein the third set of information generated by the electrical sensor is a time-dependent electrical waveform generated in response to a body-generated electrical signal.

5. (Previously Presented) The device of claim 1, wherein the hand-held component further comprises an analog-to-digital converter connected to the processing module.

6. (Canceled)

7. (Currently Amended) The device of claim 1, wherein at least one of the first and second optical source components ~~further comprises a first optical source component~~ LED that generates visible radiation, and ~~an additional optical source component a~~ second LED that generates infrared radiation.

8. (Previously Presented) The device of claim 7, wherein at least one of the first and second optical sensors is a photodiode.

9. (Currently Amended) The device of claim 8, wherein the photodiode is configured to generate a photocurrent after detecting radiation generated by the first ~~optical source component~~ LED and the ~~additional optical source component~~ second LED.

10. (Previously Presented) The device of claim 9, wherein the hand-held component further comprises an analog-to-digital converter connected to the processing module and configured to receive and process the photocurrent.

11 - 13. (Canceled)

14. (Previously Presented) The device of claim 1, wherein the processor further comprises computer-readable firmware that processes the first set of information to additionally determine pulse oximetry and heart rate.

15 - 17. (Canceled)

18. (Previously Presented) The device of claim 1, wherein the hand-held component further comprises a serial interface.

19. (Original) The device of claim 18, wherein the serial interface is configured to send information to an external device.

20. (Original) The device of claim 18, wherein the serial interface is configured to accept calibration information.

21-22. (Canceled)

23. (Currently Amended) A method for measuring a blood pressure value from a patient, comprising the steps of:

1) holding a hand-held component proximal to the patient's skin, the hand-held component comprising: i) a first optical component comprising a first optical source component configured to emit optical radiation and a first optical sensor configured to detect reflected radiation and, in response, generate a first set of information while the hand-held component is held proximal to the patient's skin; ii) a second optical component comprising a second optical source component configured to emit optical radiation and a second optical sensor configured to detect reflected radiation and, in response, generate a second set of information while the hand-held component is held proximal to the patient's skin; iii) an electrical component comprising an electrode pair configured to generate a third set of information while the hand-held component is held proximal to the patient's skin; and iv) a processor, comprised by the hand-held component, and operating an algorithm configured to process the first, second, and third sets of information;

2) initiating a measurement wherein the first optical component generates the first set of information, the second optical component generates the second set of information, and the electrical component generates the third set of information; and

3) processing the first, second, and third sets of information with the processor by calculating a first ~~time-difference between~~ time-dependent property from components of the first and second sets of information, and calculating a second ~~time-difference between~~ time-dependent property from the third set of information and at least one of the first and second sets of information, and comparing the first and second ~~time-differences~~ time-dependent properties to a mathematical model to calculate a blood pressure value.

24. (Currently Amended) A method for analyzing a blood pressure value from a patient, comprising the steps of:

- 1) holding a hand-held component proximal to the patient's skin, the hand-held component comprising: i) a first optical component comprising a first optical source component configured to emit optical radiation and a first optical sensor configured to detect reflected radiation and, in response, generate a first set of information while the hand-held component is held proximal to the patient's skin; ii) a second optical component comprising a second optical source component configured to emit optical radiation and a second optical sensor configured to detect reflected radiation and, in response, generate a second set of information while the hand-held component is held proximal to the patient's skin; iii) an electrical component comprising an electrode pair configured to generate a third set of information while the hand-held component is held proximal to the patient's skin; and iv) a processor, comprised by the hand-held component, and operating an algorithm configured to process the first, second, and third sets of information;
- 2) initiating a measurement wherein the first optical component generates the first set of information, the second optical component generates the second set of information, and the electrical component generates the third set of information;
- 3) processing the first and second sets of information with the processor by calculating a first ~~time difference between~~ time-dependent property from components of the first and second sets of information and processing the third set of information and at least one of the first and second sets of information with the processor by calculating a second ~~time difference between~~ time-dependent property from components of the third

set of information and at least one of the first and second sets of information and comparing the first and second ~~time differences~~ time-dependent properties to a mathematical model to calculate a blood pressure value; and

4) wirelessly transmitting the blood pressure value to an external receiver.

25. (Previously Presented) The method of claim 24, further comprising the step of transmitting the blood pressure value to an Internet-accessible computer system.

26. (Previously Presented) The method of claim 24, further comprising the step of transmitting the blood pressure value to a central computer system.

27. (New Claim) A device for monitoring a patient's blood pressure, comprising:
a first optical module comprising a first optical source component configured to generate optical radiation and a first optical sensor configured to detect radiation from the patient and, in response, generate a first set of information;

a second optical module comprising a second optical source component configured to generate optical radiation and a second optical sensor configured to detect radiation from the patient and, in response, generate a second set of information;

an electrical sensor comprising an electrode pair configured to generate a third set of information; and

a processing module configured to receive the first, second, and third sets of information, the processing module comprising a processor that calculates a first time-dependent property related to a time-dependent variation in arterial properties from components of the first set of information and the second set of information and a second time-dependent property related to a blood pressure change from the third set of

information and at least one of the first and second sets of information and compares the first and second time-dependent properties to a mathematical model to calculate a blood pressure value.